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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,515	01/06/2004	Takahiro Onizuka	108980.01	3326

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EXAMINER
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THOMAS, LUCY M

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/751,515	<b>Applicant(s)</b> ONIZUKA ET AL.	
	<b>Examiner</b> Lucy Thomas	<b>Art Unit</b> 2836	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/812,888.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/06/2004, 3/16/2004</u> | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION*****Drawings***

1. The drawings are objected to because Figure 15 contains incorrect label, "FET Cat-off Line" which should be corrected to "FET Cut-off Line." Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The attempt to incorporate subject matter into this application by reference to prior application is ineffective because the Application Number is incorrect. It

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appears that the correct Application Number is 09/812,555. Appropriate correction is required.

***Claim Objections***

3. Claims 1, 2, 3, and 5 are objected to because of the following informalities:

Recitation of "thee" in Claim 1, line 8 should be corrected to "the."

Claims 2 and 3 recite the limitation "the larger current side" in line 2. This makes the claim indefinite as it is unclear what is meant by the limitation. For purpose of examination, this limitation is interpreted to mean that the fuse has a higher ampere rating than the cut-off current of the semiconductor switches.

Recitation of "potion" in Claim 5, line 6 should be corrected to "portion."

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosei (Patent Abstracts of Japan, Vol. 1998, no.10). Regarding Claim 1, Kosei discloses a power distributor 20, for distributing electric power from a power source mounted on a vehicle to a plurality of electronic units 42, the power distributor comprising: an input terminal connected to the power source (see Abstract and input terminal 47 connection to source in Drawings 7), a plurality of

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output terminals 26 connected to each of electronic units (see Abstract, Drawing 7); a plurality of semiconductor switching elements (see 11A, 11B in Drawing 9 and 44 in Drawing 7) having a first current flowing terminal 12A, 12B provided corresponding to the output terminals and connected to the input terminal, a second current flowing terminal 14A, 14B connected to the output terminals, and a current flowing control terminal 13A, 13B into which a signal for controlling the current flowing between the first and second current flowing terminal is inputted (see Paragraph 6); a control circuit 22 for forcibly turning off the semiconductor switching element when the current flowing through any one of semiconductor switching elements exceeds a predetermined cut-off current (see Claim 2); and a fuse 5 (see Drawing 5) arranged in series with each of the semiconductor switching elements, wherein when the semiconductor switching elements are not normally turned off the fuse is fused to protect its downstream side circuit from over current. Claims 2-3 recites the fusing characteristics of the fuse recited in Claim 1, to indicate that the fuse has a higher ampere rating than the cut-off current of the semiconductor switching elements. In the configuration taught by Kosei, the fuse would necessarily have a higher ampere rating than the cut-off current of the semiconductor switching elements so as to not impede with the operation of the circuitry.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosei (Patent Abstracts of Japan, Vol. 1998, no.10) and Melvin (US 6,288,881). Regarding Claim 4, Kosei does not disclose that the fuse is provided in the middle portion of each of the output terminals. Melvin discloses a protection circuit wherein a fuse 80 is connected in series between a switching element 82 and load 44 (Figure 2, Column 1, lines 15-21, Column 3, lines 6-14, 22-35, Column 6, lines 5-11). It would have been obvious to those skilled in the art to modify Kosei's power distributor to locate a fuse as taught by Melvin, because It is well known in the art to place the fuse between the switch and the load so that a load can be associated with a particular switch.

Regarding Claim 5, Kosei discloses the power distributor, wherein the output terminals are formed of metallic plate (see Drawing 9), and divided into a terminal main body portion connected to the outer circuit and an element connection portion connected to the second current flowing terminal of the semiconductor switching element. Remaining portion of Claim 5, and Claim 6 recite the location of the fuse, configured such that the switch and the load would be in series.

Regarding Claim 9, Kosei discloses a power distributor, wherein the output and input terminals are formed of metallic plates, and the output terminals

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and the input terminals, are arranged to be aligned on the same plane perpendicular to the thickness direction (see Drawings 2, 9).

Regarding Claim 10, Kosei discloses a control terminal P2 connected to the current flow control terminal of each of semiconductor switching elements, wherein the control terminal, the input terminal and the output terminals are formed of metallic plates, and are arranged to be aligned on the same plane perpendicular to the thickness direction (see Drawing 9). Regarding Claim 11, Kosei discloses a control circuit board 23 in which the control circuit is assembled and arranged in almost parallel to the plane on which the input terminal, the output terminals and the control terminal are arranged, wherein the input terminal, the output terminal and the control terminal are electrically connected to the control circuit board (Drawing 2, Claims 1 and 2).

Regarding Claim 12, Kosei discloses the power distributor, wherein the control circuit calculates a value corresponding to the current value flowing through each of semiconductor switching elements according to the difference between the voltage of the input terminal and the voltage of each of output terminal; and when the value exceeds a predetermined cut-off current, a control signal to forcibly turn off the semiconductor switching element is outputted to the current flow control terminal of the semiconductor switching element through the control terminal (see Claim 2).

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosei (Patent Abstracts of Japan, Vol. 1998, no.10) in view of Melvin (US 6,288,881) and Neibecker et al. (US 5,973,409). Regarding Claim 7, Kosei

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discloses a casing (see Drawing 1 and 2) for accommodating the switching elements. Regarding Claim 8, Kosei discloses a case main body (Drawing 2) in which the semiconductor switching elements are assembled, and cover (Drawing 1) attached to the case main body to cover the semiconductor switching elements. Kosei fails to disclose a separation portion on the rear surface of the cover protruding toward a case main body to separate each of the fuses from each other. Neibecker teaches a power distributor 38, with opening 96 in a casing 98, 12 for the fuses 90, 92. It would be obvious to those skilled in the art to include a separation portion on the cover rather than on the main body as taught by Neibecker to facilitate easy installation and removal of the fuses.

8. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosei (Patent Abstracts of Japan, Vol. 1998, no.10) in view of Melvin (US 6,288,881), Neibecker et al. (US 5,973,409), and Susuki (US 5, 995,374).

Regarding Claim 13, Kosei and Melvin do not disclose that each of the terminals is integrated with each other by the resin mold, and the case main body is structured by the resin mold. Susuki discloses electronic parts integrated with each other with resin mold, and the case main body is structured by the resin mold (see Abstract, Figure 4, Column 1, lines 6-9, 17-37). It would have been obvious to those skilled in the art at the time the invention was made, to integrate each of the terminals with each other by the resin mold and structure the case main body using resin as taught by Susuki, because resin provides water-proofing, moisture proofing, and corrosion-resistance to protect the electronic parts mounted on in vehicle.



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Regarding Claim 14, Kosei, Melvin or Susuki do not teach providing a window to expose the middle portion of each of the output terminals in the main body, to expose the fuses from the window. Neibecker discloses a power distributor 38, with opening 96 in a casing 98, 12 for the fuses 90, 92. It would have been obvious to those skilled in the art at the time the invention was made to modify the power distributor of Kosei to provide a window for the fuses as taught by Neibecker to facilitate easy access of the fuses for installation and replacement.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy Thomas whose telephone number is 571-272-6002. The examiner can normally be reached on Monday - Friday 8:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LT

November 14, 2004



**PHUONG T. VU**  
**PRIMARY EXAMINER**